UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,246	07/24/2003	Christopher J. Elliott	10123/00601	1009

7590 06/29/2009

Patrick J. Fay, Esq.
FAY KAPLUN & MARCIN, LLP
Suite 702
150 Broadway
New York, NY 10038

EXAMINER	
HOUSTON, ELIZABETH	

ART UNIT	PAPER NUMBER
3731	

MAIL DATE	DELIVERY MODE
06/29/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHRISTOPHER J. ELLIOTT

Appeal 2009-002676
Application 10/626,246
Technology Center 3700

Decided:[1] June 29, 2009

Before DEMETRA J. MILLS, ERIC GRIMES, and
RICHARD M. LEBOVITZ, *Administrative Patent Judges*.

GRIMES, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims 1, 2, 5-12, 24 and 26, which are directed to an embolic coil. The Examiner has rejected

---

[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

The Specification discloses that "[e]mbolic coils are one example of devices that may be used to stop undesired blood flow in situations, for example, requiring treatment of aneurysms" (Spec. ¶ 0001). The coil is "inserted in the affected blood vessel" where it "slows down the flow of blood through the weakened [blood vessel] section" (*id.* at ¶ 0003). The Specification also discloses

> a method of forming an embolic coil which comprises the steps of setting a shape memory core element to a shape defining a secondary coil shape of the embolic coil, straightening the core element, winding an elongated outer element around the straightened core element to form a primary coil of the embolic coil, and releasing the straightened core element to form the secondary coil of the embolic coil.

(*Id.* at ¶ 0005.)

Claims 1, 2, 5-12, 24 and 26 are on appeal.[2] Claim 1 is representative and reads as follows:

> Claim 1: An embolic coil comprising:
> an elongated core element formed of a shape memory material treated to define a memorized secondary coil shape;
> an elongated outer element wound around the elongated core element to define a primary coil shape of the embolic coil; and
> a plurality of fibers gripped between adjacent coils of the primary coil.

The claims stand rejected under 35 U.S.C. § 103(a) as follows:

---

[2] Claims 13-23 are also pending but have been withdrawn from consideration by the Examiner (Office Action mailed Sept. 5, 2006).

- claims 1, 2, 5-11, 24 and 26 in view of Kupiecki[3] and Villar;[4] and
- claims 5 and 12 in view of Kupiecki, Villar, and Ferrera.[5]

OBVIOUSNESS I

Issue

The Examiner has rejected claims 1, 2, 5-11, 24, and 26 under 35 U.S.C. § 103(a) as being obvious in view of Kupiecki and Villar. The claims have not been argued separately and therefore claims 2, 5-11, 24, and 26 stand or fall with claim 1.[6] 37 C.F.R. § 41.37(c)(1)(vii).

The Examiner finds that "Kupiecki discloses an embolic coil comprising an elongated core element. … formed of a shape memory material, nitinol, … treated to define a memorized secondary coil shape; and an elongated outer element (202) wound around the elongated core element to define a primary coil shape of the embolic coil" but "does not disclose that the coil has fibers" as arranged in the claim (Answer 3). The Examiner finds that "Villar discloses an embolic coil comprising polymeric fibers, which promote tissue growth … in vascular occlusions" and that "the fibers are gripped (by the coil that it is looped around) between adjacent coils" (*id.* at 4). The Examiner concludes that it "would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the fibers into [Kupiecki's] coil since they enhance the performance of the coil as stated by Villar" (*id.*).

---

[3] Kupiecki et al., US 5,980,514, Nov. 9, 1999.
[4] Villar et al., US 6,287,318 B1, Sep. 11, 2001.
[5] Ferrera et al., US 6,171,326 B1, Jan. 9, 2001.
[6] Although claim 24 is addressed separately (Appeal Br. 6), Appellant relies on the same argument as presented for claim 1.

Appellant contends that the Examiner erred in finding that the cited references suggest fibers "*gripped between* adjacent coils of the primary coil" as required by claim 1 (Appeal Br. 5).

The issue with respect to this rejection is: Does the evidence of record support the Examiner's conclusion that the cited references suggest an embolic coil with fibers "gripped between adjacent coils of the primary coil" as required by claim 1?

Findings of Fact

1. The Specification discloses that the "fibers 22 may be held in place, for example, by friction between the loops of the primary coil 20, such that a certain amount of pressure between the loops is necessary to securely retain the fibers 22 therebetween" (Spec. ¶ 0012).

2. Kupiecki discloses "[a]n artificial occlusion kit … for implanting and retaining an artificial occlusion device in a body space adjacent to and extending from a body lumen in a mammal" that includes "at least one occlusion device adapted for filling at least a portion of the body space, and a retaining device assembly that includes a retaining device" for retaining the occlusion device in the body space (Kupiecki, col. 4, ll. 1-18). The device is described a useful for the treatment of aneurysms (*id.* at col. 3, ll. 65-67).

3. Figure 8 of Kupiecki is shown below:

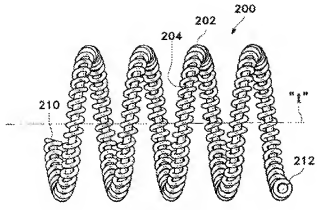

Fig. 8

Figure 8 shows a retaining device "constructed of a wire wound into a helix over a core member, the helical wire and core member being formed into a secondary geometry" (*id.* at col. 5, ll. 63-67).

4. Kupiecki discloses that in "the 'wire over core' combination structure [as shown in Figure 8] . . . , the inner core member (204) is chosen such as to provide the requisite shape memory and stiffness" (*id.* at col. 14, ll. 33-35).

5. Kupiecki discloses that "the addition of the mandrel [i.e., inner core member (204)] in what would otherwise be the primary helix lumen provides a stiffening structure that still allows for a certain controlled flexibility of the secondary helical shape" (*id.* at col. 14, ll. 55-58).

6. Figure 9A of Kupiecki is shown below:

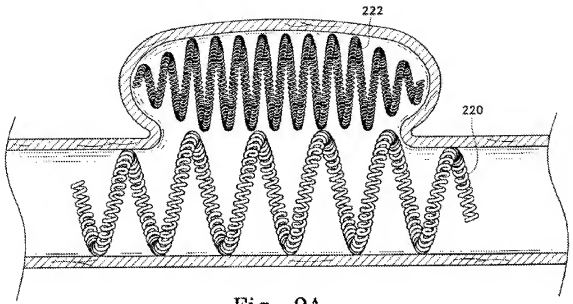

Fig. 9A

Figure 9A shows a retaining device (220) and an "anatomically shaped oval (222)" filler or occlusion coil suitable for embolizing an aneurysm (*id.* at col. 15, ll. 43-44).

7. Villar discloses "an occlusive device suitable for placement in an internal area of the human body" that "has been found to facilitate the formation of neocapillaries, scar tissue, cellular growth, or healing tissue in the occlusion" (Villar, col. 2, ll. 8-17). The device has a core element and two additional components which are polymeric in nature (*id.* at col. 2, ll. 18-22). One of these is a polymer in fibrous form "which is present in the inventive device quickly to form clots when placed in the vasculature" (*id.* at col. 2, ll. 22-24). The device can be used in the interior of an aneurysm (*id.* at col. 2, ll. 8-17).

8. Figure 2 of Villar is shown below:

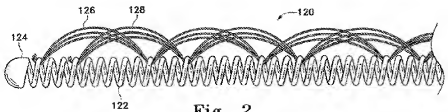

Fig. 2

Figure 2 shows a "device involving a coil and a looping of fibrous members" (*id.* at col. 2, ll. 47-48).

9. Villar discloses that

> FIG. 2 shows another variation (120) of the inventive occlusion device. In this variation, coil (122) also has a constant diameter although it is somewhat more stretched than is the coil shown in FIG. 1. Coil (122) also has coil ends (124) as was the case with the coil shown in FIG. 1. In this variation, the respective fibrous elements (126 and 128) are looped through the turns of the coil.

(*Id.* at col. 4, ll. 48-57.)

10. Villar discloses that the fibrous members can be composed of polymeric materials (*id.* at col. 4, ll. 9-61) and that "each of the polymeric materials can be attached to any allied core member [i.e. the coil] variously by appropriate and safe glues or, if the polymeric materials are thermoplastics, by heating those polymers to cause them to maintain a contact with the core member" (*id.* at col. 5, ll. 21-26).

Principles of Law

> [A]s an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be

> afforded by the written description contained in the applicant's specification.

In re Morris, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

Analysis

Claim 1 is directed to an embolic coil comprising a core element made of a shape memory material having a memorized secondary coil shape, an outer element wound around the core element to define a primary coil shape, and fibers gripped between adjacent coils of the primary coil.

Kupiecki discloses an embolic kit containing a "wire over core" embolic coil that includes the primary coil and secondary coil recited in claim 1. Villar discloses an embolic coil with fibers looped between the coils. In view of these disclosures, it would have been obvious to one of ordinary skill in the art to modify the prior art Kupiecki coil with the fibers of Villar because the fibers, as disclosed by Villar, facilitate "the formation of neocapillaries, scar tissue, cellular growth, or healing tissue in the occlusion" (FF 7). Such a combination is no more than the predictable use of prior art elements according to their established functions. Although Villar's fibers are not shown in Figure 2 as held between *adjacent* coils, as recited in claim 1, Villar does not restrict its disclosure to this embodiment. Thus, Villar's statement that the fibers "are looped through the turns of the coil" (FF 9) would have suggested looping the fibers between any two coils of an embolic coil, including adjacent ones, because such configuration would have been reasonably expected to promote rapid clot formation.

Appellant contends that Villar does not teach or suggest fibers *gripped between* adjacent coils (Appeal Br. 5). Appellant argues that the Villar

embodiment with fibers is described as having coils that are "more stretched" and that stretched coils "are incapable of gripping fibers between them as they will not provide the necessary pressure to keep the fibers in place" (*id.*). Appellant provides a dictionary definition of the term "gripped" as meaning "to secure and maintain a tight hold on; seize firmly" (*id.*; citing the *American Heritage Dictionary of the English Language, Fourth Edition*). Appellant's arguments are not persuasive. The Specification does not define the term "gripped." However, in describing how the fibers are "held in place", it states "for example" the fibers may be held in place by "friction" and "pressure" between the coils (Spec. ¶ 0012). As exemplary language is explicitly used, we do not understand this to restrict the fiber/coil configuration to a friction or pressure fit, or define it to exclude attaching fibers to the coil by other means. According to the dictionary definition of the term "gripped" provided by Appellant, therefore, the broadest reasonable interpretation of the term *gripped between*, in accord with *In re Morris*, would require only that the fibers are held firmly between the coils. "Absent an express definition in their specification, the fact that appellants can point to definitions or usages that conform to their interpretation does not make the PTO's definition unreasonable when the PTO can point to other sources that support its interpretation." *In re Morris*, 127 F.3d at 1056.

Villar discloses fibers that are looped between the coils and that may be fastened at the point of contact with the coils. Thus, the fibers would be held firmly, or "gripped," between the coils.

Appellant further argues that "Villar specifically describes attaching the fibers to the core member. … Any attachment would thus exist only at

the point which the fiber touches the core member 122" (Appeal Br. 5). Appellant argues that such contact would be "on the inner curve of the looped coil, and not *between* the adjacent coils" (*id.*; citing Fig. 2 of Villar).

Appellant's argument is not persuasive. Whether the fibers are attached to the coil at the side of the coil facing its lumen or at the coil area between coils, the fibers would be held firmly between the coils and thus would be "gripped" between the coils.

Conclusion of Law

The evidence of record supports the Examiner's conclusion that the cited references suggest an embolic coil with fibers "gripped between adjacent coils of the primary coil" as required by claim 1.

OBVIOUSNESS II

The Examiner has rejected claims 5 and 12 under 35 U.S.C. § 103(a) as being obvious in view of Kupiecki, Villar, and Ferrera.

The Examiner relies on Kupiecki and Villar as making obvious the embolic coil of independent claim 1, as discussed above, and concludes that Ferrera would have made obvious the additional limitations of dependent claims 5 and 12 (Answer 5-6). We agree with the Examiner's reasoning and conclusion.

Appellant contends that Ferrera does not cure the deficiencies of the combination of Kupiecki and Villar in suggesting the invention of independent claim 1 (Appeal Br. 7). This argument is not persuasive for the reasons discussed above.

SUMMARY

We affirm the rejection of claims 1, 2, 5-12, 24 and 26 under 35 U.S.C. § 103(a) as obvious based on the cited references.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

cdc

Patrick J. Fay, Esq.
FAY KAPLUN & MARCIN, LLP
Suite 702
150 Broadway
New York NY 10038